TYPE KC
1/8 TO 3/4 HP

GENERAL-PURPOSE
CAPACITOR MOTORS

APPLICATIONS
CONSTRUCTION
CHARACTERISTICS
MODIFICATIONS
RATINGS
ADVANTAGES

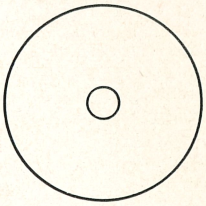
GENERAL ELECTRIC

What Is a Capacitor-motor?

A CAPACITOR-MOTOR is a single-phase motor that has a capacitor (condenser) connected in one of its windings. The few and simple parts of this motor are shown schematically at the right.

The arrangement of these parts is shown below. The two windings are in different sectors around the stator. The starting winding, the capacitor, and the centrifugal switch are connected in series. The centrifugal switch is mounted on the rotor and is set to open at a predetermined speed.

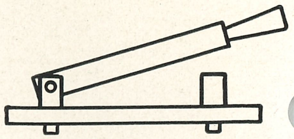
When power is applied, current flows in the direction shown by the red lines and arrows.

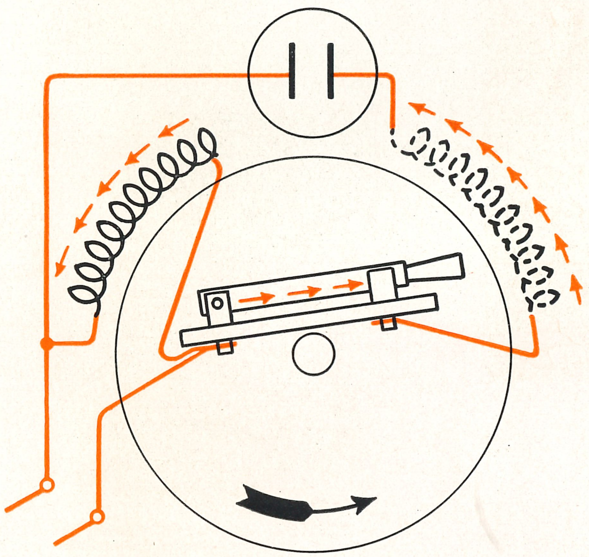

1. Rotor

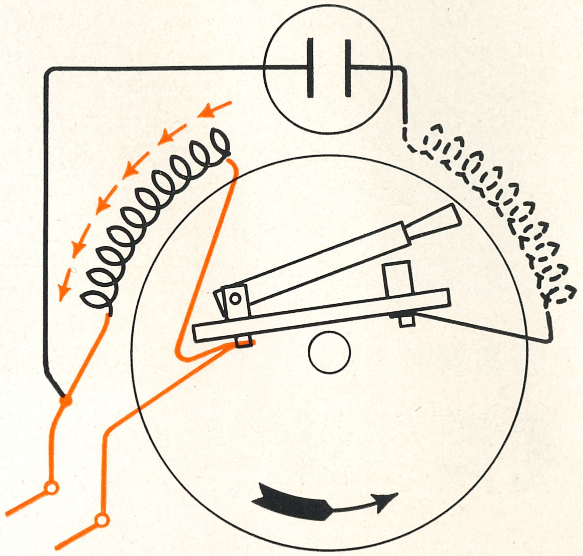
4. Capacitor

2. Running winding

3.Starting winding


5. Centrifugal switch


The phase displacement, set up by the capacitor, of the currents in the starting and running windings, together with their physical displacement on the stator, produces a rotating magnetic field that starts the rotor revolving

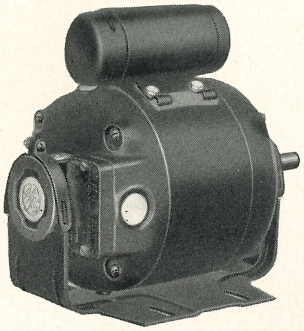

When the rotor reaches a predetermined speed, the centrifugal switch opens the starting-winding circuit. Current flows only in the running winding, and the motor operates the same as an ordinary induction motor

Why Capacitor-motors Are Used

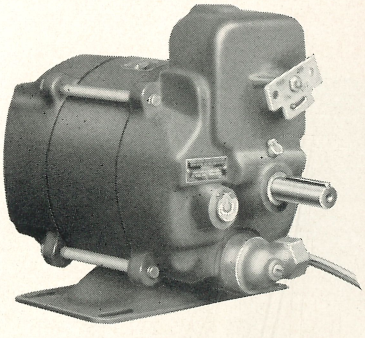
Some machines require more torque (effort) to start them than the resistance split-phase motor can provide. The capacitor-motor is designed for these applications and differs from the resistance split-phase motor chiefly in that it has a capacitor connected in series with the starting winding.

The use of the capacitor gives the motor a high starting torque with low starting current without sacrifice of the advantages of the resistance split-phase motor. Occasional oiling depending upon conditions of motor service, is the only attention required. Motor operation does not interfere with radio reception. Capacitor-motors have become the accepted drive for domestic refrigerators, and for stokers and similar devices in which long life, minimum servicing, and quiet operation are of paramount importance.

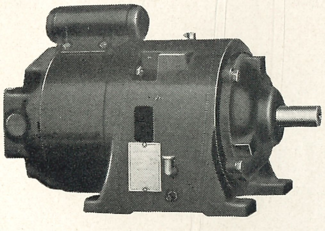
What They Will Drive



For Stokers—Resilient base for quiet operation



For Gasoline Pumps—Listed by the Underwriters' Laboratories, Inc.; dual voltage



For Low-speed Drives—Offers unusual economies in installation costs

APPLICATIONS

DOMESTIC DEVICES

- Attic ventilators
- Furnace air conditioners
- Hermetic refrigerating units
- Home workshops
- Ice-cream freezers
- Oil burners
- Refrigerators
- Stokers
- Water systems

GARAGE EQUIPMENT

- Air compressors
- Drills
- Grease guns
- Grinders
- Pumps
- Special machines

COMMERCIAL REFRIGERATION

- Air conditioning
- Beverage coolers
- Hermetic refrigerating units
- Refrigerating machinery
- Room coolers

LABORATORY EQUIPMENT

- Agitators
- Centrifuges
- Mixers

MACHINE TOOLS

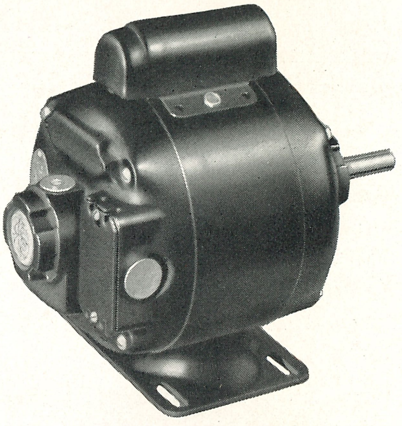
- Drills
- Lathes
- Saws
- Shears
- Presses

PUMPS AND COMPRESSORS

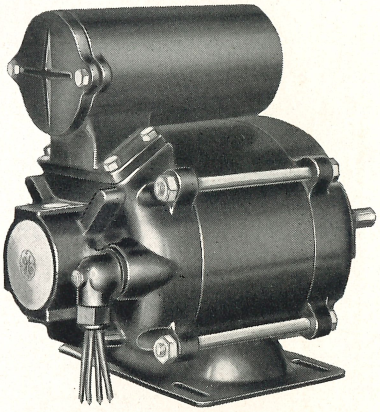
- Circulating pumps
- Centrifugal pumps
- Paint sprays
- Refrigerating machines
- Vacuum pumps

RATINGS

1/8 to 3/4 hp, inclusive; single-phase; 110 or 220 volts; 25, 50, or 60 cycles; high starting torque; constant speed.

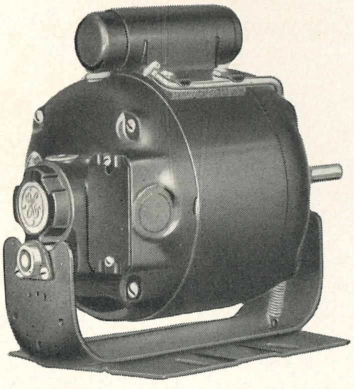


For Water Pumps—Sturdy and reliable and do not interfere with radio reception

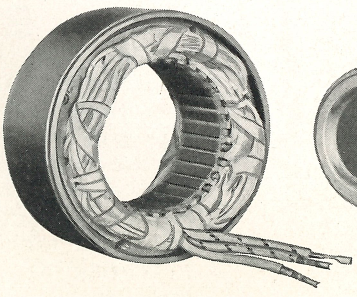


For Explosive Atmospheres—Tested and listed by the Underwriters' Laboratories, Inc. for meeting such conditions

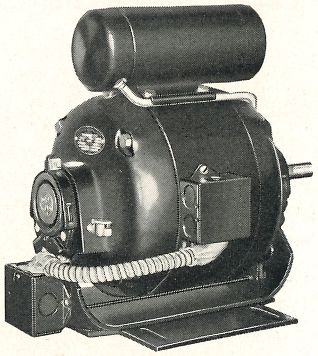
FOR REFRIGERATORS



Automatic belt-tightener base maintains just enough belt tension to prevent slipping—prolongs belt and bearing life



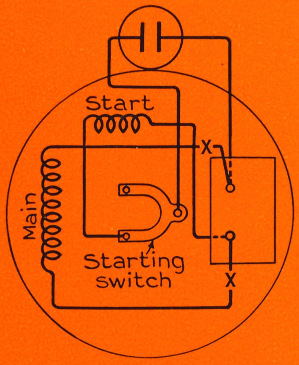
Parts for hermetically sealed refrigerator mechanisms—capacitor is mounted separately



Larger rating; for use on small commercial and industrial applications. Equipped with belt-tightener base

WHY THEY GIVE YOU

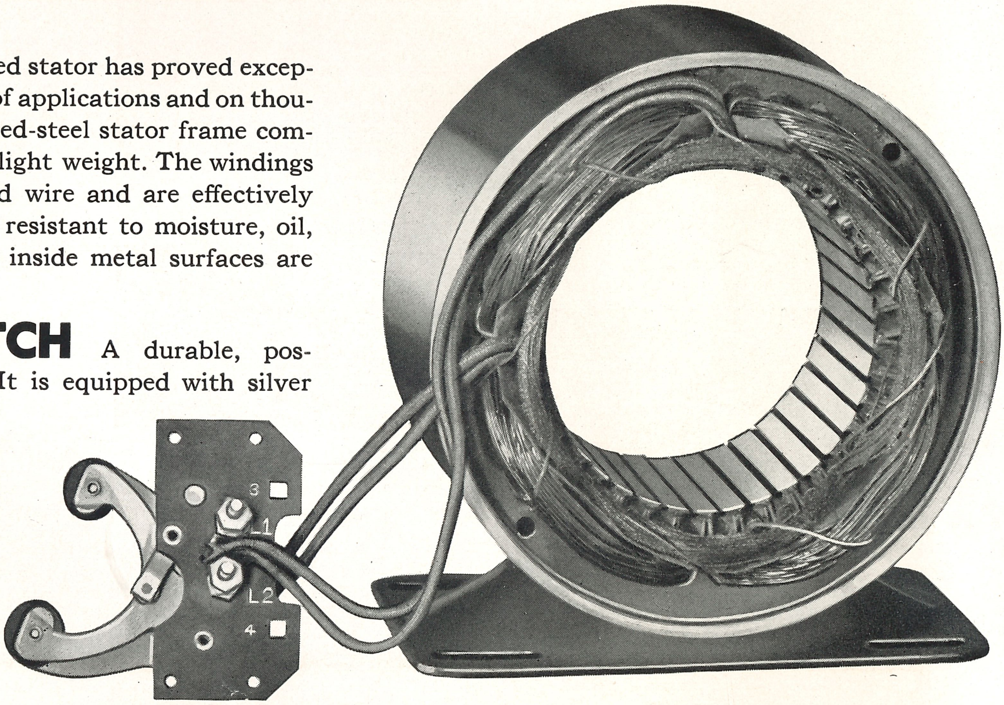
G-E motors are built to give you the utmost in dependable and economical operation. The materials from which they are made are tested before being used, the motor parts must pass many exacting tests during manufacture, and every motor is given a two-hour test run, followed by a brake test. An examination of the high-quality construction, shown below, will give a better understanding of why G-E motors "come through" on a long, hard pull.

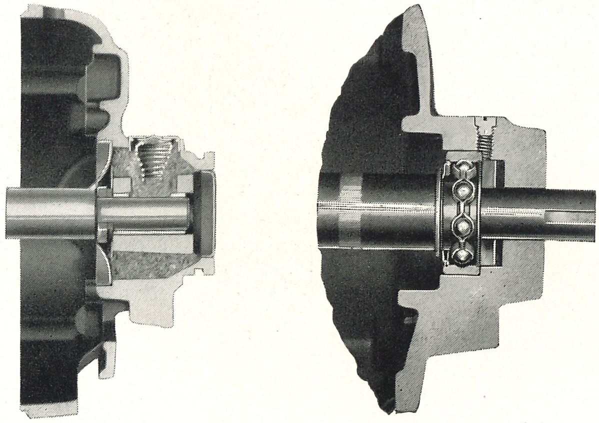


Connection diagram of single-voltage motor that has a built-in terminal box. To reverse rotation, leads marked x are interchanged

STATOR This long-lived stator has proved exceptionally dependable in hundreds of applications and on thousands of motors. The welded rolled-steel stator frame combines strength and rigidity with light weight. The windings are made from specially selected wire and are effectively insulated throughout—they are resistant to moisture, oil, and mild acids and alkalis. The inside metal surfaces are treated to resist rust.

STARTING SWITCH A durable, positive-acting centrifugal switch. It is equipped with silver contacts and is rustproof, quiet-operating, and long-lived. The switch is mounted on the motor end shield and the actuating mechanism is on the rotor shaft.





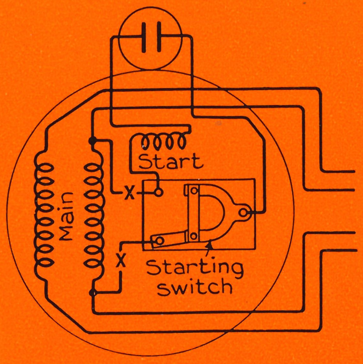
BEARINGS

This sleeve bearing has extra large oil-storage capacity and needs oiling only occasionally. A constant supply of fresh, clean oil is supplied to the bearing, for the oil is filtered and fed to the bearing by the wool packing and is circulated by oil throwers and returns. Bearing linings are bored concentric with end-shield rabbets. Their mirror-like finish adds to bearing life and quiet operation.

Ball bearings can be furnished if required. They are packed at the factory with sufficient grease to last two years.

Available in Open, Totally Enclosed

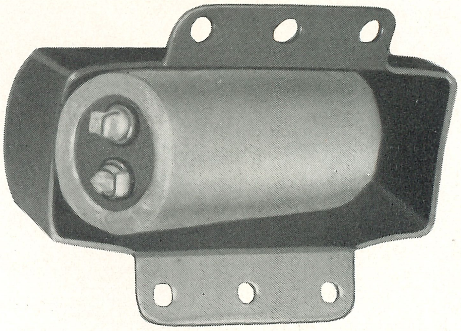
DEPENDABLE SERVICE

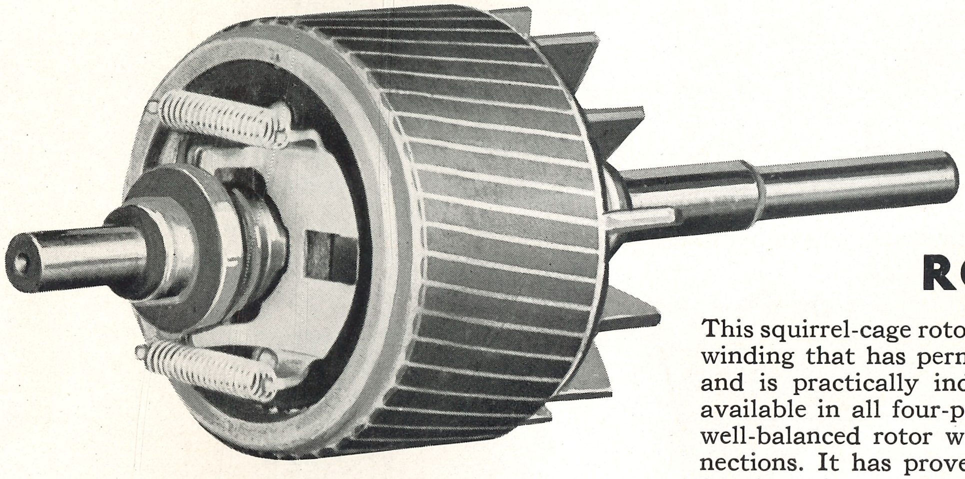


Connection diagram of dual-voltage motor that has leads brought out of the side. To reverse rotation, leads marked x are interchanged

CAPACITOR

Long-lived dry-electrolyte capacitors are used in G-E motors. Marked improvements in G-E capacitor design have made possible such a small, compact unit. Assembled in a pressed-steel housing that harmonizes in appearance with the motor frame.

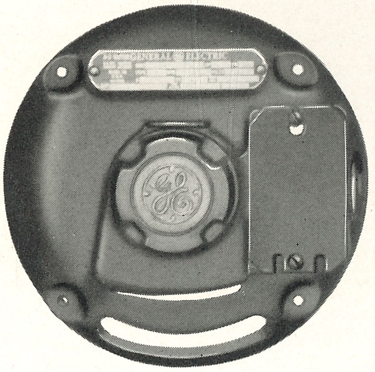




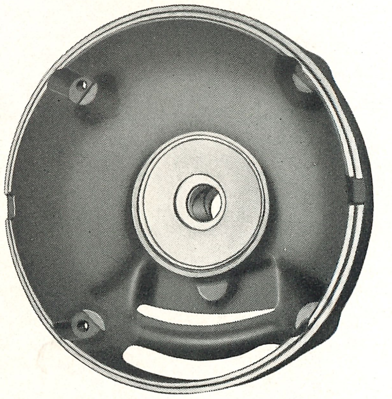
ROTOR

This squirrel-cage rotor has a one-piece cast-aluminum winding that has permanent electrical characteristics and is practically indestructible. This construction, available in all four-pole motors, gives an inherently well-balanced rotor without riveted or soldered connections. It has proved its superiority in millions of fractional-horsepower motors.

END SHIELDS



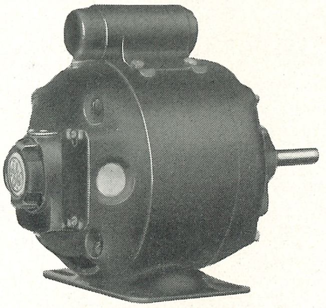
These end shields have ventilating openings arranged to protect the windings from falling water and dirt. They give rigid support to the bearings and are accurately machined and aligned to hold the rotor concentric within the stator. The 40-frame capacitor-motor is equipped with a built-in terminal box in the end shield; cord-and-plug or conduit connections are quickly made to the terminals without soldering or splicing. In other sizes the leads are brought out through a conduit box on the stator.



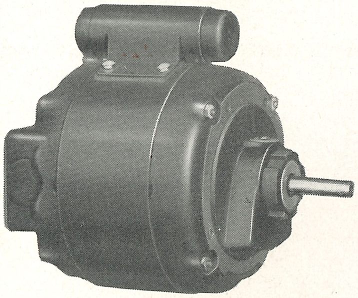
and Explosion-proof Construction

How They Are Mounted

G-E capacitor-motors are easily and quickly installed



Slotted base for horizontal, side-wall, or ceiling mounting



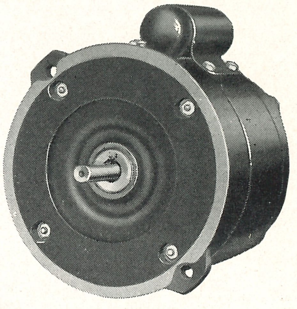
Machined end shield for direct connection to machines

These motors are available in a wide variety of mechanical modifications for any method of mounting that may be desired. Typical examples are shown.

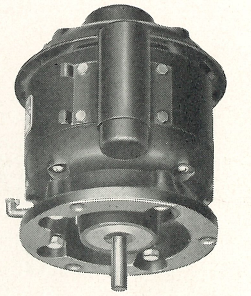
All base-mounted motors have slotted bases for ease in mounting and for making belt adjustments quickly. In addition, the Type KC capacitor-motor has interchangeable mounting dimensions.

Once the mounting-bolt holes have been located on a machine, other types of G-E motors of corresponding ratings for other power supplies can be mounted by using the same bolt holes. The location of the base holes and the shaft location with respect to the base holes are the same for all these motors. Motors with solid bases are also interchangeable, with respect to mounting, with resilient-base motors.

Identical mounting dimensions are a valuable feature of G-E motors. They save money on installation costs when machines are to be used on different power supplies.

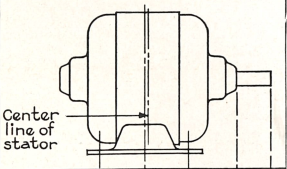
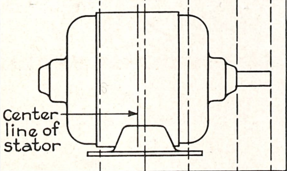
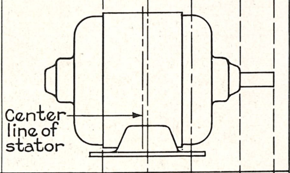
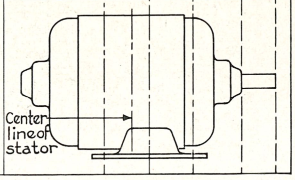


Solid flange mounting for machine tools and similar devices

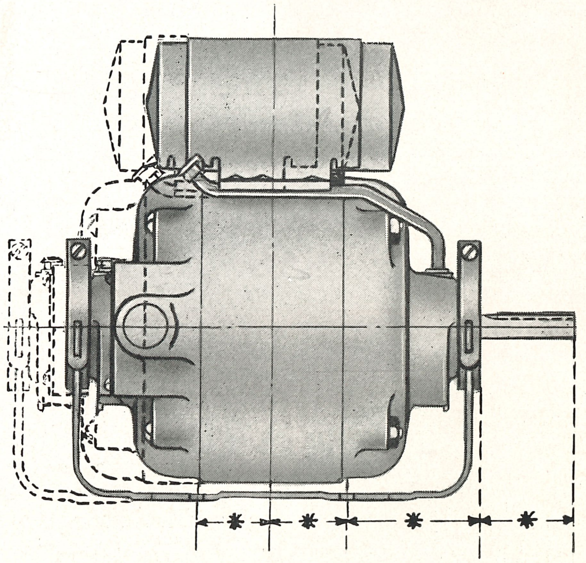


Ring base for vertical mounting

INTERCHANGEABLE MOUNTING DIMENSIONS

POLYPHASE 60 cycle	
CAPACITOR 25 cycle	
CAPACITOR 60 cycle	
DIRECT-CURRENT	

Mounting dimensions are the same for corresponding ratings used with various power snpplies



The G-E capacitor-motor in ⅛-, ⅙-, ⅕-, ¼-, and ⅓-hp, 1725-rpm ratings and the corresponding odd-frequency, direct-current, and polyphase motors have identical mounting dimensions. Note the illustration above. Dimensions marked (*) are the same for all motors of the same frame diameter. This is especially convenient for refrigerator, stoker, and many other applications.

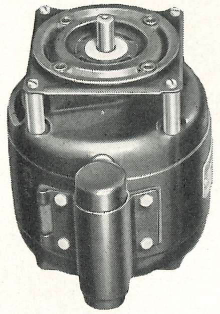
Why They Are Quiet

Where quietness is essential, the scientifically designed General Electric resilient mounting should be used. It is available on 40-, 60-, and 70-frame motors. Large resilient rings close to the axis of vibration, are the cushioning elements. Scientific selection of materials and accurate calculation of dimensions give the rings the proper characteristics to absorb torque pulsations, restrain endwise movement, and maintain shaft alignment. The resilient rings are practically unaffected by oil, air, and aging.

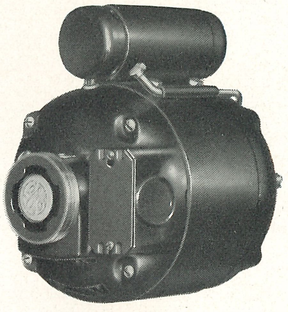
What G-E Research Means to You

Resilient mounting is just one of the many improvements that G-E research has made in fractional-horsepower-motor performance. The millions of dollars that General Electric has spent and is spending in research for improvements in design, material, and methods give you a longer-lived and better motor at less cost. Continual progress and improvement in G-E motors as a result of research keeps their performance record outstanding.

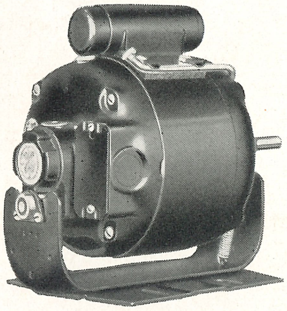
TYPES OF RESILIENT MOUNTING



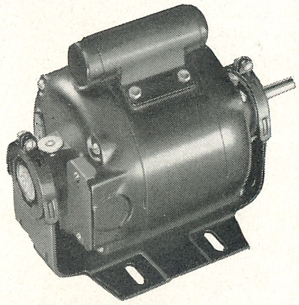
Resilient base for vertical mounting



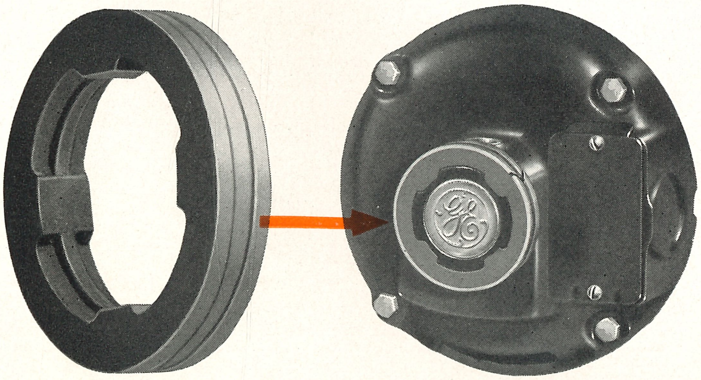
Resilient-ring mounting



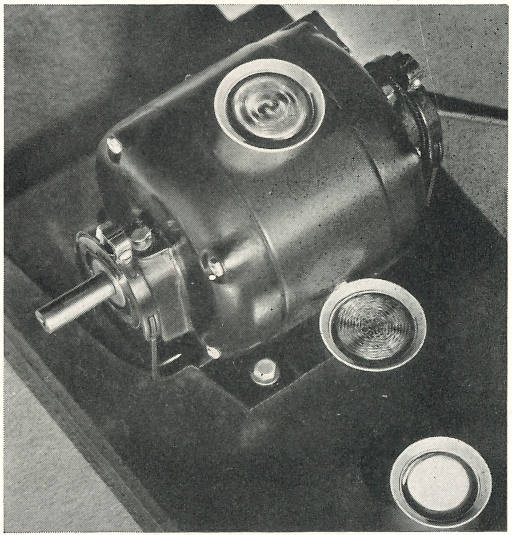
Resilient belt-tightener base



Resilient-base mounting



This resilient ring, when assembled on the end shield, isolates all torque pulsations from the motor base



This mercury-pool test shows the effectiveness of the resilient rings—notice that no ripples appear in the cup on the base

How G-E Motors Help You Sell

They Make the First Sale Easier

A prospect for your machines, in checking over the important features, comes to the electric equipment. He realizes that it is important, but to him appearance is no criterion of its worth. He must rely on the manufacturer.

Here is where G-E motors do you a real, practical service. General Electric has a widespread reputation for outstandingly high-quality electric equipment. This reputation of G-E motors, added to that of your machines, makes it easier to convince prospects that your equipment is of high quality throughout, thus making selling easier.

"I certainly like my new machine—sorry I didn't get it two years ago."

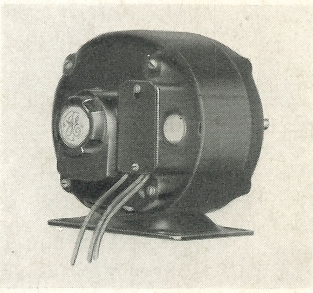
They Give Service that Makes Friends

You must look beyond the initial sale if your business is to thrive year after year. Your installations must give trouble-free service that will make your present customers your salesmen in their community by telling their associates how well they like your equipment.

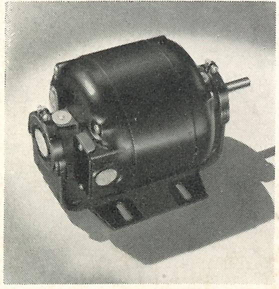
G-E motors are built to give this service that means more sales for you. For example, the cast-aluminum rotor winding cannot become open-circuited or burn out, and the long-lived bearings require oiling only at infrequent intervals. And G-E motors are quiet—they do not interfere with radio reception.

OTHER TYPES OF G-E MOTORS

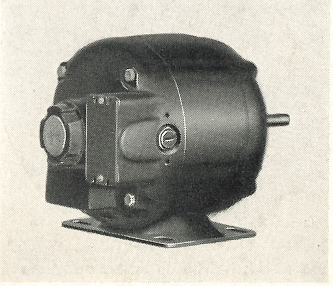
General Electric can supply other types of motors for applications for which capacitor-motors are not suitable—it has a type to meet every requirement. Some of these are illustrated below. Our staff of specialists will be glad to discuss your motor problems with you. In addition, we can supply you with control and wiring devices for every service condition. Contact the nearest G-E sales office, or write to General Electric, Schenectady, N. Y., for additional information.



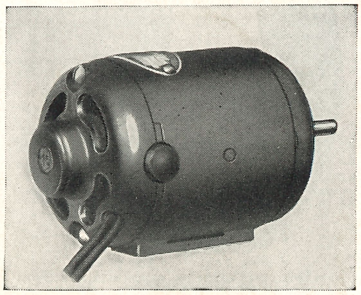
Polyphase motor, Type K



Split-phase motor, Type KH



Direct-current motor, Type BC



Series motor, Type P

GENERAL ELECTRIC

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